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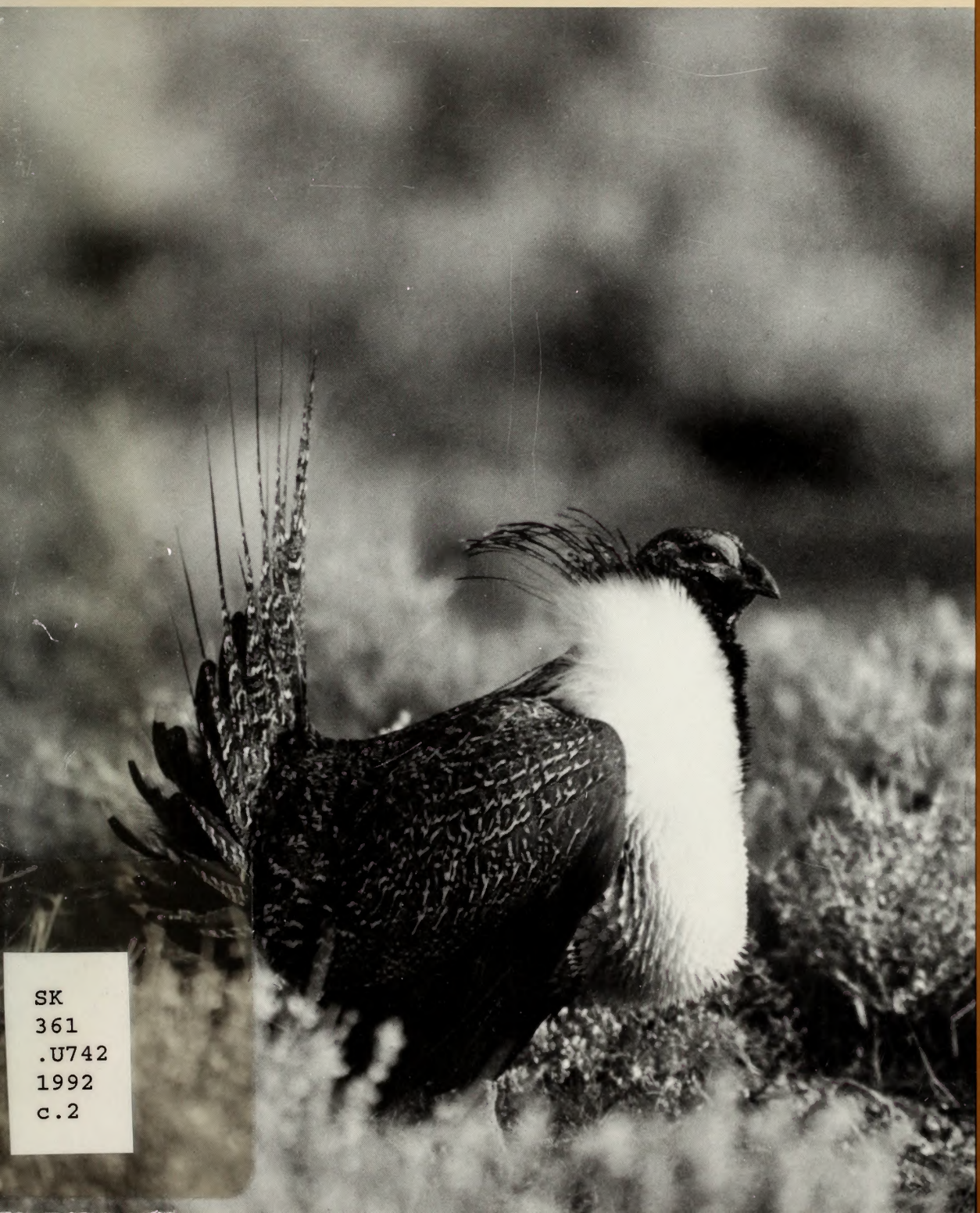
Upland Game Bird Habitat Management

ON THE RISE



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Fish & Wildlife 2000

National Strategy Plan Series

FISH & WILDLIFE 2000

NATIONAL STRATEGY PLANS

The following component plans include implementation strategies for achieving the specific goals and objectives outlined in *Fish & Wildlife 2000 — A Plan for the Future.*

FISH

Fisheries Habitat Management
Anadromous Fish Habitat Management

WILDLIFE

Waterfowl Habitat Management
Wetland Environments Today & Tomorrow
Desert Bighorn Sheep Habitat Management
Raptor Habitat Management
Watchable Wildlife
Non-Game Migratory Bird Habitat Conservation
Upland Game Bird Habitat Management
Big Game Habitat Management

THREATENED/ENDANGERED SPECIES

Desert Tortoise Habitat Management
Special Status Plant Management
Special Status Fishes Habitat Management

ADMINISTRATIVE

Wildlife and Fisheries Information System
Career Management Team Findings for Wildlife and Fisheries Biologists
Training BLM Wildlife and Fisheries Program Personnel
Staffing for the BLM Wildlife and Fisheries Program

Cover Photo: William H. Mullins

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UPLAND GAME BIRD HABITAT MANAGEMENT

ON THE RISE

October 1992

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RON SPOMER

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PLAN SUMMARY

The *Upland Game Bird Strategy Plan* is one of a series of publications that addresses specific wildlife management needs and opportunities on Bureau of Land Management (BLM) lands. It is tiered to *Fish and Wildlife 2000,* BLM's national strategy for management of fish, wildlife and special status plant resources.

This plan was prepared by a team chosen to represent conservation organizations and state wildlife agencies, as well as managers and biologists from BLM. Much of the information about the status and management of upland game bird species was gained through two questionnaires. The first was sent to all BLM wildlife biologists in field offices and the second to all western state wildlife agencies, several universities with wildlife departments, and to other selected biologists with upland game bird expertise.

The *Upland Game Bird Strategy Plan* outlines the importance, current status and needs of BLM's upland game bird resource, and highlights accomplishments in the field. It also identifies seven management actions needed to achieve the overall goal for upland game bird management in *Fish and Wildlife 2000*: "To have habitat of sufficient quality and quantity to sustain economic and social contributions to society." The seven actions are:

- Inventory and Research
- Activity Plans
- Habitat Protection
- Habitat Improvement
- Habitat Monitoring and Maintenance
- Coordination and Partnerships
- Outreach and Training

Each management action is followed by strategies that provide direction and set a course for program implementation. The plan concludes with the identification of funding needs and their planned distribution.

INTRODUCTION

BACKGROUND

Fish and Wildlife 2000

In 1987, the Bureau of Land Management (BLM) published a national plan for enhancing fish and wildlife resources on public lands, called *Fish and Wildlife 2000.* The plan outlines BLM's approach to managing fish and wildlife habitat and provides program direction through the end of the century.

Fish and Wildlife 2000 is a broad policy document. It outlines overall habitat management goals and objectives for big game, upland game, waterfowl, raptors, riparian areas, anadromous and resident fish, and threatened and endangered species. The plan emphasizes the need and outlines ways to improve cooperation and expand partnerships among BLM, other agencies and public interest groups to achieve fish and wildlife resource goals and objectives.

Strategy Plans

Fish and Wildlife 2000 provides for more detailed plans, called National Strategy Plans, to be prepared that address specific fish and wildlife management needs and opportunities. *Upland Game Bird Habitat Management Plan*, is one in this series.

Together, *Fish and Wildlife 2000* and the National Strategy Plans provide guidance to all levels of BLM for managing fish and wildlife resources. This guidance will be reflected in BLM's national program planning and budgeting plans.

UPLAND GAME BIRD PLANNING TEAM

The strategies presented in this plan were developed by BLM and its many partners who comprised the national Upland Game Bird Planning Team. Team members were chosen to reflect the many agencies and wildlife organizations that work with BLM to improve upland game bird resources.

Dr. Clait E. Braun, Wildlife Research Leader, Colorado Division of Wildlife and Representative of the Western States Sage and Columbian Sharp-tailed Grouse Committee
Ray Brubaker, Wyoming State Director, Bureau of Land Management
J. David Brunner, Boise District Manager, Bureau of Land Management
Ed Chaney, Co-founder, The Chukar Foundation
Dan Connelly, Wildlife Management Supervisor, California Department of Fish and Game
Dr. John Connelly, Principal Wildlife Research Biologist, Idaho Department of Fish and Game
Dan Dessecker, Biologist, Ruffed Grouse Society
Ron Engel-Wilson, Small Game Management Supervisor, Arizona Game and Fish Department
Dr. James Earl Kennamer, Director of Research and Management, National Wild Turkey Federation
Gerald A. Kobriger, Upland Game Management Supervisor, North Dakota Game and Fish Department and Representative of the Prairie Grouse Technical Council
David R. Lockwood, Western Field Representative, Pheasants Forever, Inc.
*Mike Mathiot,** Western Regional Director, Quail Unlimited
*Terry Rich,*** District Biologist, Dickinson District Office, Bureau of Land Management
Alan Sands (team leader), Wildlife Biologist, Idaho State Office, Bureau of Land Management
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*Paul Tankersley,**** Natural Resource Specialist, Safford District, Bureau of Land Management
Roger Wells, Western Division Manager, Quail Unlimited

* Currently Waterfowl/Wetlands Program Manager, Bureau of Land Management, Boise, Idaho
** Currently Nongame Migratory Bird Program Manager, Bureau of Land Management, Boise, Idaho
*** Currently Wildlife Biologist, U.S. Forest Service, Oden, Arkansas

WILLIAM H. MULLINS

In the evening light along the Idaho/Oregon border, a chukar hunter pauses to thank his partner before heading home.

Upland Game Bird Questionnaires

The Planning Team prepared two questionnaires to obtain information about upland game birds on BLM land. The first was sent to biologists at BLM's 180 field offices. It addressed bird distribution, status, management and research needs. Ninety-eight percent of these questionnaires were completed and returned.

The second questionnaire was sent to all western state fish and game agencies, western universities with wildlife departments, and selected biologists knowledgeable of upland game bird resources on public land. It focused on upland game bird management and research needs. Sixty-six questionnaires were sent and 43 were returned (65%).

Data obtained from these questionnaires represent the best available information on upland game bird populations, habitat and management on BLM land. It reflects estimates and the professional judgment of the state and federal wildlife biologists responsible for upland game bird resources at the field level.

UPLAND GAME BIRDS

The upland game birds discussed in this document belong to two groups: gallinaceous birds (grouse, quail, pheasants, etc.) and doves and pigeons. Gallinaceous birds spend most of their time on the ground, generally fly short distances, and have large broods that feed themselves after hatching. Males of most species are more colorful than females and perform elaborate courtship displays.

Doves and pigeons are quite different from gallinaceous birds. They usually nest in trees or shrubs, are strong fliers, and their young are highly dependent on the adults. They usually have small clutches but frequently raise more than one brood per year. Birds in northern latitudes migrate south to escape harsh winter conditions.

Their Importance: Yesterday, Today and Tomorrow

Native Americans hunted upland game birds for food and feather adornments. They lured birds into traps or patiently stalked them with bow and arrow. In several Indian cultures, dances imitated prairie grouse courtship displays.

Upland game birds provided a ready source of food for trappers and pioneers. As settlement continued, commercial hunting became common. In California, millions of quail were shot or trapped during the 1880s and 1890s. Other species elsewhere received similar treatment — historical accounts describe wagonloads of sharp-tailed grouse and prairie-chickens being sent to market.

Unregulated hunting took its toll on upland game birds. Regulations were enacted near the turn of the century but compliance was lax and enforcement ineffective. It was many years before illegal harvest was stemmed. Today, however, season and bag limits are largely obeyed and hunting is regulated to avoid over-harvest.

Recreational hunting of upland game birds is popular. Annually, almost a million hunter days are enjoyed just on BLM land in 10 western states. The economic value of upland game bird hunting on BLM land exceeds 20 million dollars annually (Table 1).

The value of upland game birds transcends dollars and cents. A day spent with a friend pursuing blue grouse at the edge of a forest or hunting chukar in a steep desert canyon is a true outdoor pleasure. The invigorating crisp fall air, the changing tree and shrub colors, a blue sky with scattered clouds, and the companionship of a trained hunting dog add to the enjoyment.

Just as memorable are the spring rituals of many upland game birds. The drumming of ruffed grouse, dancing of sharp-tailed grouse, strutting of sage grouse, and booming of prairie-chickens, to mention a few, are some of the best shows nature provides.

TABLE 1

Estimated Annual Upland Game Bird Hunting Effort and Value on BLM Lands in Western United States During Late 1980s

STATE	HUNTING DAYS ON BLM LANDS	VALUE ($) ON BLM LANDS
Alaska	Data Not Available	Data Not Available
Arizona	185,500	$4,274,000
California	321,400	7,635,900
Colorado	30,300	523,400
Idaho	97,200	1,819,100
Montana	30,000	517,200
Nevada	71,200	1,897,600
New Mexico	61,300	1,631,900
Oregon	56,000	807,400
Utah	44,100	825,900
Wyoming	13,600	312,200
TOTAL	**910,600**	**$20,244,600**

Generated using both state game survey data and U.S. Fish and Wildlife Service's National Survey of Fishing, Hunting and Wildlife Associated Recreation data. Dollar values were calculated using 1986 values plus 20% for 1989 values.

Their Needs: Important Biological and Environmental Requirements

Upland game birds are relatively short-lived, but they have a high reproductive potential. Populations can boom during favorable years. Conversely, unfavorable conditions during nesting, brood rearing or winter can cause severe population losses.

Weather prominently affects most upland game bird populations. In desert areas, for example, quail will not nest during a severe drought. In northern latitudes and at higher elevations, prolonged heavy snowfall can cover food, causing high losses in species dependent on low-growing plants and seeds.

While weather can cause dramatic changes in upland game bird abundance, its effects are short-term. Habitat — food, cover, and water — ultimately determines the suitability of an area to support upland game birds. Both quantity and quality figure into the habitat equation. Long-term population trends are most often tied to habitat conditions.

Gallinaceous birds rely on cover and will not venture far from it. Cover moderates the effects of severe weather and provides protection from predators. Their other habitat requirements, food and water, must be nearby for the birds to flourish.

Different types of cover serve different daily and seasonal needs. For example, after feeding in the open, California quail use shrub cover for protection during the day and seek densely branched, elevated roosting sites at night. Chukar find security in rocks and cliffs. Cattail patches enable pheasants to withstand blizzard conditions. And uncrusted snow allows sharp-tailed grouse, ptarmigan, and ruffed grouse to burrow and survive during wind chill surface temperatures as low as -80° F.

Upland game bird habitat is very patchy, consisting of many unoccupied or poorly occupied areas. Frequently, birds are concentrated near areas which offer moisture — a meadow or stream course (riparian habitat). Although water is important, especially during the summer, these moist areas offer much more. Vegetation in these areas is different than the surrounding vegetation. It ususally provides superior cover, more nutritious plants, and increased insect numbers, which is essential to most young birds. Meadow and riparian habitats are rare in the west. They make up less than 1% of the landscape.

"Everybody knows that the autumn landscape in the north woods is the land, plus a red maple, plus a ruffed grouse. In terms of conventional physics, the grouse represents only a millionth of either the mass or the energy of an acre. Yet, subtract the grouse and the whole thing is dead."

Aldo Leopold, 1949
Sand County Almanac

The Current Situation: Nationwide Status of Upland Game Birds

Across the nation upland game birds are well below historic levels. Urbanization and industrialization have eliminated millions of acres of upland game bird habitat. Farming, which at first benefitted most upland game birds, has become so intensive that it is now often detrimental. Native species, such as prairie-chickens and sharp-tailed grouse, have been largely eliminated from agricultural areas. Even introduced species that are better adapted to farming, such as pheasants and gray partridge, have declined. Livestock grazing, logging, fire (or sometimes the lack of it), and the invasion of non-native plants have affected most remaining natural environments. A few of these activities have been beneficial; most have not.

Two native species, the heath hen and the passenger pigeon, are extinct, and two others, Attwater's prairie-chicken and masked bobwhite, are listed as endangered. Several other species have undergone huge declines in distribution and abundance. These include Columbian sharp-tailed grouse, greater and lesser prairie-chickens, sage grouse and mountain quail.

Our ability to improve the status and reverse population losses of upland game birds is exemplified by the wild turkey. Unregulated hunting and habitat degradation reduced their numbers from an estimated 10 million birds to about 30,000 by the early 1900s. Restoration work began in the 1950s and today they number over three million and populations are growing.

Management *can* and *does* make a difference.

BLM'S UPLAND GAME BIRD RESOURCES

Status and Trends

BLM lands are home to almost every upland game bird species found in the United States (Table 2). For sage grouse, Gambel's quail and chukar, they provide the major portion of their habitat. For lesser and greater prairie chickens, Columbian sharp-tailed grouse and Gould's wild turkey, BLM land provides little habitat. Nonetheless, these areas are important since these species have undergone significant habitat losses throughout their range. BLM and other public lands may be their best hope for avoiding endangered status.

Upland game bird habitat on BLM land has not escaped the pressures of modern society. Although most lands are undeveloped, the natural vegetation has been modified over extensive areas by fire, invasion of exotic plants, livestock grazing, timber harvest, mineral and energy development, and intensive recreation uses. Consequently, millions of acres of habitat are degraded and most upland game bird populations are lower today than in the past. Native species have been hardest hit. Populations of a few species are now increasing and many are stable, but nearly half continue to decline (Figure 1).

TABLE 2

Estimated Occupied Acreage of Upland Game Bird Habitat on BLM Land

SPECIES	ACREAGE
Mourning Dove	58.1 million
Sage Grouse	30.0 million
Chukar	12.8 million
Gambel's Quail	12.2 million
Spruce Grouse	8.9 million
Rock Ptarmigan	8.3 million
Ruffed Grouse	7.1 million
Willow Ptarmigan	7.1 million
Blue Grouse	6.4 million
Gray Partridge	6.1 million
Sharp-tailed Grouse	5.9 million
White-winged Dove	5.5 million
White-tailed Ptarmigan	4.7 million
Scaled Quail	4.0 million
Band-tailed Pigeon	3.9 million
Wild Turkey	3.2 million
California Quail	3.0 million
Mountain Quail	2.7 million
Ring-necked Pheasant	2.2 million
Northern Bobwhite	1.2 million
Lesser Prairie-chicken	325,000
Montezuma Quail	275,000
Greater Prairie-chicken	< 50,000

FIGURE 1

Long-Term Population Trends of Upland Game Birds on BLM Lands

GAINING GROUND

Greater Prairie-chicken
Alaskan Sharp-tailed Grouse
Wild Turkey

STABLE

Spruce Grouse
Ruffed Grouse
Blue Grouse
Ptarmigan (all species)
Lesser Prairie-chicken
California Quail
Gambel's Quail
Chukar
Gray Partridge

LOSING GROUND

Plains Sharp-tailed Grouse
Columbian Sharp-tailed Grouse
Sage Grouse
Northern Bobwhite
Montezuma Quail
Mountain Quail
Scaled Quail
Ring-necked Pheasant
Mourning Dove
White-winged Dove
Band-tailed Pigeon

LOST FROM BLM LANDS

Masked Bobwhite

Looking Ahead

Left unchecked, declining population trends are likely to continue. The increasing demand for other uses of BLM land will continue to create pressures on upland game bird habitat, and even those species with increasing or stable population trends could be negatively affected. Balancing those competing uses is a considerable challenge to land managers.

Although the challenges are formidable, the future is promising. The rate of habitat loss on BLM land is slow and recent management actions have helped habitat in some areas. The opportunity to improve upland game populations on BLM land is tremendous. The habitat needs of most upland game birds can be easily accommodated with only modest changes in existing uses, resulting in significant population increases. Areas without birds can often be made suitable through management. For example, providing a small amount of shrub cover in what is otherwise an annual grassland will attract California quail, or a water development in a dry, rocky canyon can make an area suitable for chukar. The distribution of many species can be expanded by at least a million acres (Figure 2). BLM land is also available for less common species whose habitat is limited on both public and private land (Figure 3).

"From the veranda one had a clear view of the lower reaches of the ranch. Pale gray ribbons of Atriplex separated the fields — some now green with well grown winter wheat, others newly fallowed and dark brown in the fading light. The main water course through the ranch was heavily grown to willow and juniper, from which presently could be heard the distant calling of quail . . . The good quail population on the property had not come about by accident. During the off season, when farming operation allowed, the rancher and his son had planted many gullies and odd corners with Atriplex *and juniper, and built fences to protect the plantings from his own cows. Quail watering devices were installed in the areas far from natural water, and a few roosts had been constructed to serve until the junipers grew up and assumed this function. Now the rancher took pride in carrying a normal population of a bird per acre on the property as a whole, which is good by any standard. In the autumn, he and the boy would invite friends for a few good quail hunts, but most of the year the pleasure was in watching the birds and anticipating their needs."*

A. Starker Leopold, 1977
The California Quail

FIGURE 2

ROOM TO GROW:
Upland Game Birds with Potential to Expand Their Range by At Least 1 Million Acres on BLM Lands

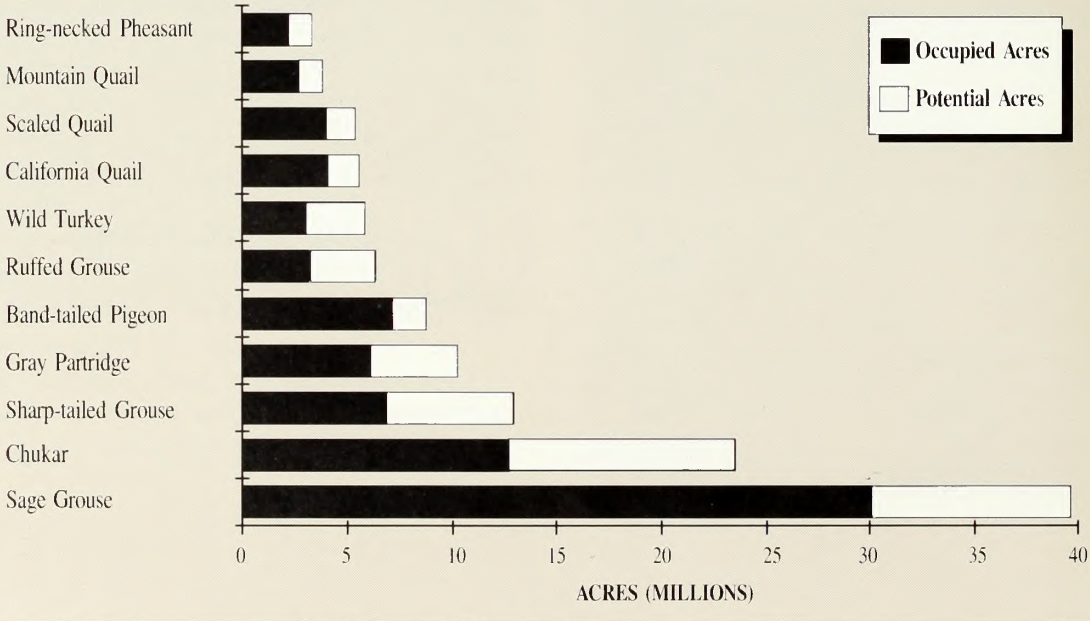
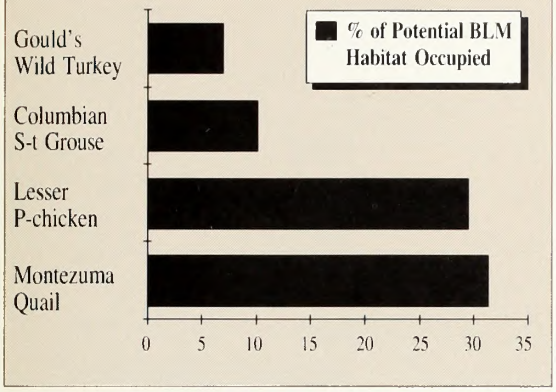


FIGURE 3

Uncommon Upland Game Birds Occupying Less Than Half Their Potential Habitat



More and more, people want BLM to improve habitat conditions and provide additional wildlife-related recreation. Organizations including the National Wild Turkey Federation, Pheasants Forever, Quail Unlimited and the Ruffed Grouse Society, to mention a few, are eager to assist in improving upland game bird habitat. In addition, many western state wildlife agencies have habitat stamp funds dedicated solely to the improvement of upland game bird habitats.

Until recently, upland game birds have received little management emphasis in BLM. Land managers are now aware of the need to improve habitat. *Fish and Wildlife 2000* has set the stage for increased emphasis on upland game bird habitat management. Translating this momentum into on-the-ground actions can halt most current downward trends and provide for significant increases for some species.

SPECIES SNAPSHOT

WILLIAM H. MULLINS

Mourning Dove

Where They Live

Of all the upland game birds, mourning doves are the most widely distributed species, nesting in all 48 contiguous states. In the West, doves occur primarily below timberline, avoiding dense conifer forests and alpine communities.

How They're Doing

Although still abundant and the nation's most popular upland game bird, mourning dove populations have experienced a significant long-term downward trend in the West. The underlying reasons for the decline are unknown but it's believed that a combination of factors may be responsible, including a loss of nesting habitat, changes in farming practices, poisoning from pesticides and spent lead shot, and disease. Some people believe hunting is contributing to the problem, but documented hunting losses are well below the capability of the birds to replace themselves. In some areas, populations are declining where there is no hunting.

What They Need

Mourning doves are seed eaters that have adapted to cultivated small grains such as wheat. Trees and tall shrubs are preferred nesting sites but low shrubs and, on occasion, the ground will be used when other sites are unavailable. On BLM land, riparian habitat provides important nesting areas. Water is needed daily during hot weather, but mourning doves can make long daily flights to satisfy this need.

It's a Fact

Clutch size is usually only two eggs. However, incubation takes only 14 or 15 days and the chicks are self-sufficient in another 12 to 14 days. The parents will continue to nest as long as summer weather persists. In southern Arizona, up to seven broods have been raised in one season. The chicks are fed secretions, referred to as "pigeon milk," from glands in the parent birds.

Charting a Course

BLM and state wildlife agency biologists identified 469 specific areas, totaling 70 million acres for increased management emphasis (Table 3, Appendix I). These Key Upland Game Bird Areas are widely dispersed throughout western BLM lands and all upland game species are found on them (Figure 4).

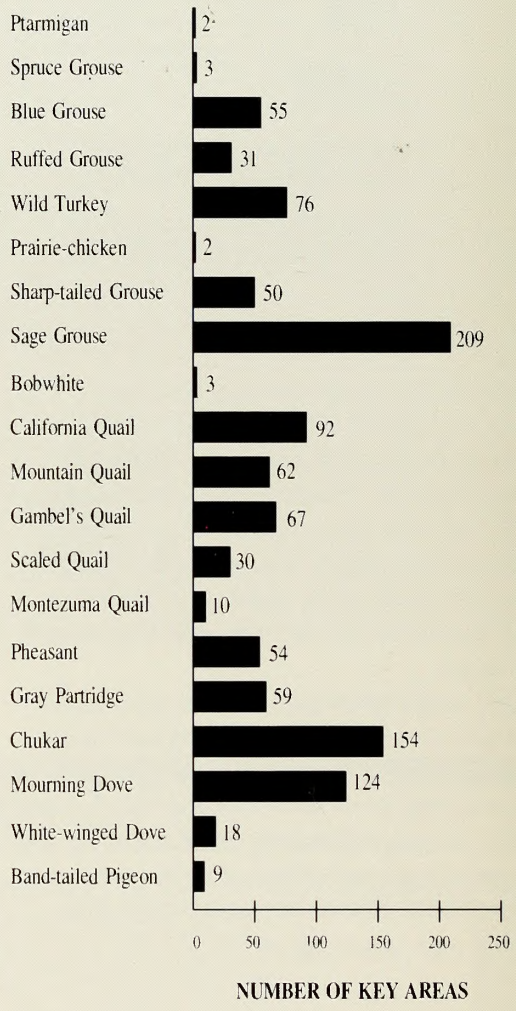
TABLE 3

BLM's Key Upland Game Bird Areas

State	No. of Key Areas	% of Total No. of Key Areas	BLM Acres (Millions)
Alaska	2	1	2.5
Arizona	18	4	2.1
California	64	14	4.0
Colorado	38	8	3.5
Idaho	63	13	4.3
Montana (ND, SD)	31	7	3.9
Nevada	77	16	21.8
New Mexico	38	8	6.5
Oregon	30	6	3.8
Utah	55	12	7.5
Washington	10	2	0.1
Wyoming	43	9	10.0
TOTAL	**469**	**100**	**70.0**

FIGURE 4

Upland Game Birds Associated With 469 Key Areas



Within each Key Upland Game Bird Area, needed management actions have been identified. They include:

1. Gathering information on the location and condition of crucial habitats (Inventory);
2. Conducting studies to improve knowledge of upland game bird habitat requirements (Research);
3. Protecting crucial habitats and acquiring land to consolidate BLM stewardship in crucial habitats (Habitat Protection);
4. Preparing site-specific plans to carry out specific habitat improvements and transplants (Activity Plans);
5. Completing habitat improvement projects (Habitat Improvement);
6. Maintaining facilities and improvements (Maintenance);
7. Determining the results of management (Monitoring).

These actions along with the estimated cost for carrying them out have been entered into a permanent data file. The information will be used to focus management, provide a basis for funding allocation and to track accomplishments.

Top priority for funding these needs will go to species that have been identified by federal or state agencies as needing special management attention due to significant declines in abundance or distribution. Masked bobwhite, Gould's wild turkey, greater and lesser prairie-chicken, Columbian sharp-tailed grouse and mountain quail are included in this group of Special Status Species. Remaining funds will be spread Bureauwide to accomplish the management actions targeted within Key Upland Game Bird Areas. Cost-sharing programs with other federal, state or private organizations will be encouraged.

SPECIES SNAPSHOT

Columbian Sharp-tailed Grouse

WILLIAM H. MULLINS

Where They Live

A bird once common throughout much of the Northern Intermountain region, Columbian sharp-tailed grouse now occupy less than 10 percent of their former range. They are now found only in a few areas of Idaho, Washington, western Montana, Utah, Colorado and Wyoming. Currently, Columbian sharptails are found on only about 500,000 acres of BLM land.

How They're Doing

Much of the original habitat of Columbian sharp-tailed grouse has been converted to farmland. Many remaining areas have been degraded by fire, grazing and invasion of non-native plants. As a result, their populations have declined dramatically. The good news is that their plight has been recognized. Management programs, including acquisitions, are underway in western Montana, Idaho, Oregon and Washington. Reestablishment efforts have begun in Oregon and may soon start in Nevada and California.

What They Need

Columbian sharp-tails need native perennial rangelands in good-to-excellent condition for nesting and brood-rearing. During fall and winter, they depend on riparian areas and mountain shrub patches to provide fruits and buds. Agricultural grain crops can substitute for fruits and buds until deep snow makes these foods unavailable.

It's a Fact

Sharp-tailed grouse perform one of the most complex and fascinating courtship dances of any bird. It's made up of a series of highly ritualized, rapid stepping movements, with tail erect, wings stretched and head held forward.

SPECIES SNAPSHOT

AL BAMMANN

Wild Turkey

Where They Live
Wild turkeys were originally found in the eastern and southwestern United States and much of Mexico. They were eliminated over much of their original range but have been successfully established in many western areas. Most turkey habitat on BLM land is in California, Utah, Arizona, New Mexico and eastern Montana.

How They're Doing
In a word, well. In two words, getting better. Populations are generally growing. Still, things can improve. For example, only eight percent of the estimated available BLM habitat in southeast Arizona and southwest New Mexico for the rare Gould's sub-species is currently occupied. Merriam's and Rio Grande subspecies occupy about half their available habitat.

What They Need
Turkeys are a bird of open forests. In the West, this type of habitat occurs primarily in ponderosa pine and mixed conifer forests, oak woodlands and along streams supporting cottonwoods. The tall, horizontally branching trees in these areas are favored for roosting. Areas that contain oaks and other mast-producing plants that provide food during the winter also support large numbers of turkeys. Careful attention to both timber harvest and grazing management in riparian areas is needed to continue this conservation success story.

It's a Fact
Hens are conscientious mothers; if danger is present, they'll order their poults to "freeze," and do likewise themselves. Between their stillness and coloration, it's difficult to spot a turkey frozen in place from even inches away.

RECENT MANAGEMENT ACCOMPLISHMENTS

MANAGEMENT HIGHLIGHTS

Highlights of BLM's efforts for upland game birds during the last 10 years are described below. The number of improvement projects for individual species and their costs are shown in Table 4. Much of this work has been completed with assistance from state wildlife agencies and volunteer groups.

Habitat Inventory

■ Completed 206 upland game bird habitat inventories. About one-third identified important nesting and brood habitat (11.6 million acres) and winter habitat (2.2 million acres) for sage grouse. Sharp-tailed grouse inventories involved 9.0 million acres of plains sharptail habitat and 1.3 million acres of Columbian sharptail habitat. Habitat inventories were also conducted for several quail species, wild turkey, chukar and pheasant.

Habitat Protection

■ Acquired through land exchange over 20,000 acres of sagebrush-steppe habitat important to Columbian sharp-tailed grouse and sage grouse in central and southeastern Washington.

■ Acquired through land exchange 45,000 acres of the Empire and Cienega ranches in southeastern Arizona, habitat for Montezuma quail, Gambel's quail and scaled quail.

■ Established the Carrizo Plain Natural Area in cooperation with several organizations. This 180,000-acre site in central California is a relic of the once-widespread San Joaquin Valley ecosystem. It provides habitat for many species of wildlife, including California quail and chukar.

RON SPOMER

Riparian habitat, the ribbon of green vegetation adjacent to water, provides crucial areas for nearly all the upland game birds. Since 1985, BLM has placed increased emphasis on the protection, restoration and enhancement of riparian habitat.

Habitat Improvement

- Installed 1,190 water catchments primarily for sage grouse, chukar and quail.
- Constructed 137 riparian/meadow fencing projects to benefit sage grouse, quail and doves.
- Conducted prescribed burns and aspen cutting to benefit blue grouse in Colorado.
- Conducted 71 prescribed burns of chaparral vegetation in California which improved habitat for mountain and California quail.
- Improved Alaskan sharp-tailed grouse habitat through prescribed burning in Steese/White Mountain area.
- Established 235 wildlife tracts covering 34,000 acres in southern Idaho to improve vegetative cover for pheasants, quail and gray partridge.
- Improved Columbian sharp-tailed grouse habitat in eastern Idaho by rotomowing and prescribed burning in sagebrush-grass habitat.

Research

- Developed a new technique using aerial photography to locate sharp-tailed grouse dancing grounds in eastern Montana.
- Completed six and finishing two additional research projects to better define the habitat requirements of sage grouse in Oregon, Idaho, Colorado and Utah.
- Investigated the effects of prescribed burning on sage grouse habitats in Colorado, Idaho and Montana, and the effect of vegetation fertilization in Colorado.
- Studied the habitat requirements of Columbian sharp-tailed grouse in three areas in Idaho and one in Wyoming.
- Investigated the effects of shinnery oak habitat manipulation on lesser prairie-chickens, scaled quail and northern bobwhite in eastern New Mexico.

Partnerships

- Signed national-level agreements with Quail Unlimited, Pheasants Forever and the National Wild Turkey Federation.
- Cooperated with the Oregon Department of Wildlife and The Nature Conservancy in the first attempt to restore Columbian sharp-tailed grouse in Oregon.
- Cooperated with state wildlife agencies and the National Wild Turkey Federation in several wild turkey transplants on BLM lands in Arizona, Colorado, Utah and California.

TABLE 4

Habitat Improvement Projects Completed for Selected Species of Upland Game Birds on BLM Lands From 1981 — 1990

SPECIES	NUMBER OF PROJECTS[1]	COST ($000s)
Ruffed Grouse	17	8
Blue Grouse	40	55
Lesser Prairie-chicken	57	33
Sharp-tailed Grouse	101	53
Sage Grouse	420	394
California Quail	514	795
Mountain Quail	212	112
Gambel's Quail	472	319
Scaled Quail	78	34
Montezuma Quail	57	33
Pheasant	158	829
Chukar	886	584
TOTAL	N/A	3,249

[1] *A project may be listed more than once if it benefited more than one species.*

IMPLEMENTATION STRATEGIES

OVERALL GOAL FOR UPLAND GAME BIRDS

This section describes a program to implement the upland game bird component of *Fish and Wildlife 2000*. The goal is to "Effect long-term improvement and restoration of upland game bird habitat on BLM land." Management actions and implementation strategies for achieving this goal follow. The costs of implementation are described in the next section of the plan.

Implementation strategies touch all levels of BLM's organization. However, most management actions will be carried out at the field office level (Appendix II).

Coordination and cooperation with state wildlife agencies and other federal natural resource agencies is crucial to the success of the program. Partnerships with conservation and sportsmen organizations will accelerate progress significantly.

SPECIES SNAPSHOT

Sage Grouse

WILLIAM H. MULLINS

Where They Live
Sagebrush country is the home of sage grouse. Major sage grouse areas are found in eastern Oregon, southern Idaho, northern Nevada, eastern Montana and most of Wyoming. Portions of Colorado, Utah, eastern California and Washington support additional populations. Limited numbers occur in North and South Dakota.

How They're Doing
Populations are still plentiful in many places, but a great deal of sage grouse habitat has been lost or degraded. Factors behind the decrease include loss of shrub cover due to fires and herbicide spraying, converting sagebrush to crops or grass, exotic plant invasions and reduction of herbaceous cover due to heavy use by livestock. These problems are not insurmountable and the potential to improve sage grouse populations on BLM land is huge.

What They Need
A variety of sagebrush species is essential, but it is not the only needed habitat component. Understory bunchgrasses and forbs are needed to help conceal nests and young. Springs, seeps and meadows provide water and high-quality food during the brood-rearing period. When these features dot sagebrush landscapes, they add up to ideal sage grouse habitat.

It's a Fact
Male sage grouse are twice as large as females. During winter, the diet of both male and female sage grouse is nearly 100 percent sagebrush leaves.

MANAGEMENT ACTION ONE: INVENTORY AND RESEARCH

Management Situation

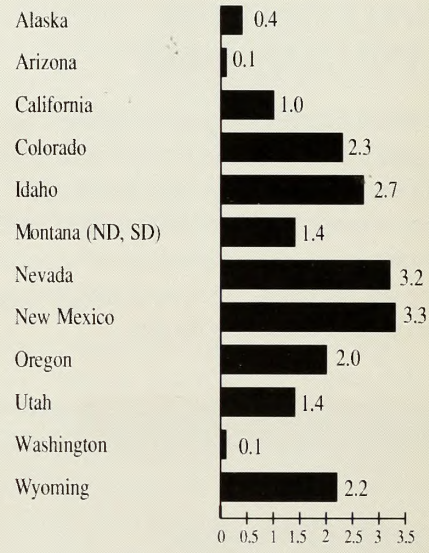
Inventory and research information are essential for effective management of upland game birds. They provide the foundation upon which other management actions are based. In some areas, BLM has adequate inventory and research information to proceed with direct on-the-ground management; in many other areas additional information is needed.

BLM needs two types of inventory information. The first is location of crucial habitats such as nesting, brood-rearing and winter areas; the second is condition of the habitat. Location is important to ensure habitats are protected from incompatible uses. Condition identifies what is needed to improve habitat.

The habitat needs of many upland game birds are not fully understood. Research is needed to determine habitat requirements, effects of land management activities on populations and methods to evaluate and enhance habitat.

FIGURE 5

Identified Habitat Inventory Needs for Upland Game Birds (20.1 million acres)



Implementation Strategies

1. *Complete habitat inventories on 20.1 million acres by the year 2000 to identify crucial areas and improvement opportunities on 257 Key Upland Game Bird Areas (Figure 5).* Give priority to special status species (listed, candidate, or sensitive) and programs where cost-share funding is available. Inventories should identify existing and potential habitats crucial to upland game birds (breeding grounds, nesting/brooding areas, and wintering areas); they should encompass discrete areas; and they should be designed to identify follow-up management actions.

2. *Conduct or support applied research on the biology and habitat requirements of upland game birds.* Give priority to special status species and to species where cost-share funding is available. Research projects should focus on:

- habitat relationships and impacts of disturbances, e.g., wildfire, mining, logging, grazing, rangeland seedings and other vegetation manipulations.
- enhancing and restoring upland game bird habitat, particularly in relation to suitable plant species and planting methods.
- developing habitat models that can be used to evaluate habitat quality.
- areas that support other broad resource management issues, such as global climate change and biological diversity.

3. *Promptly transfer new information, within and outside of BLM, through reports, publications and presentations.*

4. *Prepare Memorandums of Understanding and Assistance Agreements to promote cooperative inventory/research projects with other federal and state agencies, universities and public or private organizations.*

MANAGEMENT ACTION TWO: HABITAT PROTECTION

Management Situation

Conserving upland game bird habitat now is much more efficient than trying to restore it later.

Land use plans (Resource Management Plans or Management Framework Plans) identify resources, allocate uses and provide management direction. Stipulations can be included in these plans to avoid, decrease or mitigate impacts to upland game bird habitat. These plans can also identify Key Habitat Areas for upland game birds and, where needed, assign special management designations.

Land use plans also identify areas for disposal and acquisition. Acquisition, especially through land exchange, provides a valuable tool to consolidate important habitat areas. Improved public access to BLM lands is a common companion benefit of land acquisition.

Implementation Strategies

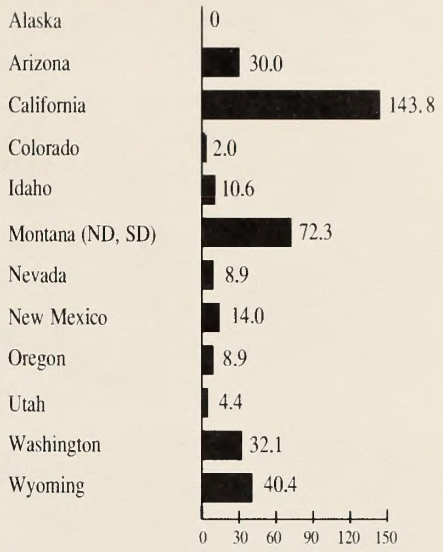
1. *Incorporate upland game bird management goals, objectives and strategies in Resource Management Plans as they are developed or amended.* Identify and target Key Upland Game Bird Areas for management emphasis. Give priority to special status species. Adopt protective stipulations to avoid or minimize habitat degradation caused by other land uses.

2. *Protect special status species of upland game birds by designating special management areas such as Areas of Critical Environmental Concern (ACECs).*

3. *Acquire, largely through exchange, 367,400 acres of crucial habitat in Key Upland Game Bird Areas by the year 2000 (Figure 6).* In coordination with state wildlife agencies, each state should prepare a list of crucial upland game bird acquisition areas by 1993. Incorporate this list into BLM state and district *Fish and Wildlife 2000* plans. Prioritize land acquisitions within Key Areas and prioritize project areas nationally with the goal of completing acquisitions in a systematic manner. Update this list annually and use it as an acquisition package and mitigation tool.

FIGURE 6

Identified Acquisitions Needed to Manage Important Upland Game Bird Habitat (367,400 acres)



4. *Obtain appropriate funding support from Management of Land and Resources (MLR) sources, including Lands and Realty Management (4210), as well as the Land and Water Conservation Fund (3110), Access (2300 and 6140) and private organizations to accomplish acquisition objectives.* Estimate total acquisition needs including cadastral survey, appraisals, realty and resource-related support.

5. *Include measures in environmental documents to avoid or minimize impacts to upland game bird habitat for proposals in Key Upland Game Bird Areas.* Provide mitigation for unavoidable conflicts.

SPECIES SNAPSHOT

Ring-necked Pheasant

RON SPOMER

Where They Live
Pheasants were introduced from China to the Willamette Valley of western Oregon in 1881, then into most other states during the next 30 years. At their peak, ring-necked pheasants were found in all agricultural areas of the country except for the southeastern states. BLM manages a little more than two million acres of pheasant habitat adjacent to agricultural lands.

How They're Doing
Modern intensive farming and urban expansion have eliminated much of the ring-necked pheasant's habitat. As a result, pheasant populations have been on a long-term downward trend until the recently enacted Conservation Reserve Program. This federal set-aside program has expanded the amount of undisturbed habitat, and pheasant populations have rebounded especially in the midwest.

What They Need
Undisturbed areas of grass and weedy vegetation are essential for successful nesting and night roosting. During winter, dense protective cover provided by shrubs and cattail marshes adjacent to foraging areas is needed to help carry the breeding population through to spring.

It's a Fact
Ring-necked pheasant populations are sensitive to severe weather, but not in the way most people would think. Besides dying from exposure, ice can form in the bird's nostrils and mouth, causing some birds to suffocate.

MANAGEMENT ACTION THREE: ACTIVITY PLANS

Management Situation

Activity plans, unlike land use plans, are site-specific; they are blueprints for action, describing what needs to be done, where it needs to occur, when it should be done and how much it will cost.

BLM has many different types of activity plans. Wildlife activity plans are called Habitat Management Plans (HMPs). Grazing and timber harvest plans are called Allotment and Timber Management Plans, AMPs and TMPs respectively. Coordinated Resource Management Plans (CRMPs) address all resource values and issues in a specific area. Areas containing special values are designated as Areas of Critical Environmental Concern (ACEC) and are managed by ACEC plans. Any of these plans may include management objectives and actions to benefit upland game birds.

Currently 69 Key Upland Game Bird Areas involving 9.9 million acres have completed HMPs with management actions for upland game birds. HMPs need to be prepared or revised for 159 Key Areas involving 50.5 million acres. The need to develop other types of activity plans with measurable habitat objectives for upland game birds was identified for an additional 61 Key Areas.

MARLIN JONES

Mountain quail nest with newly-hatched chicks.

Implementation Strategies

1. *Prepare or revise 159 Habitat Management Plans covering 50.5 million acres of upland game bird habitat by the year 2000 (Figure 7).* Prioritize activity plan preparation or revision for each Key Upland Game Bird Area by 1993 and develop a timetable for accomplishment in State and District *Fish and Wildlife 2000* Plans.

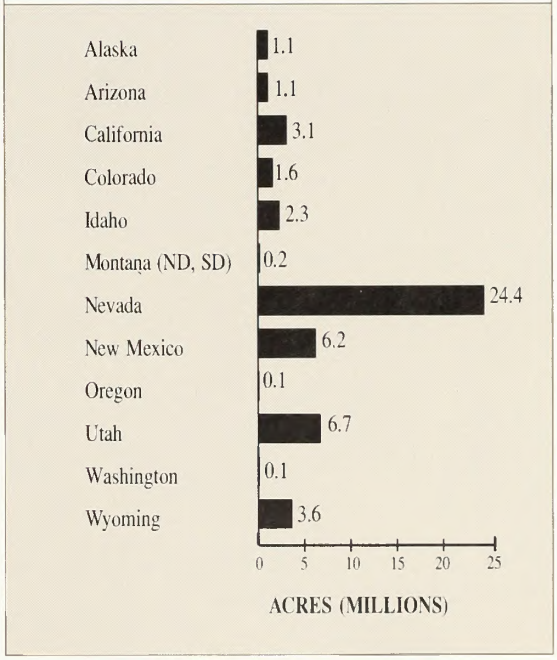
2. *Incorporate measurable habitat objectives for upland game birds into all other types of activity plans that encompass Key Upland Game Bird Areas as such plans are prepared or revised.* As appropriate, include criteria to meet cover, food and water needs.

3. *Prepare specific plans to improve populations of special status upland game birds to reduce the potential for future listing under The Endangered Species Act.*

4. *Actively cooperate with the U.S. Fish and Wildlife Service to provide additional areas for population recovery of the endangered masked bobwhite quail.*

FIGURE 7

Identified Acres for Habitat Management Plan Preparation or Revision (50.5 million acres)



MANAGEMENT ACTION FOUR: HABITAT IMPROVEMENT

Management Situation

Good habitat and healthy populations of upland game birds go hand-in-hand. That's why BLM places so much value on habitat improvement. There are many ways to improve habitat — building roost structures, modifying grazing use, conducting prescribed burns and installing water developments, for example (Table 5).

A number of funding sources are available to fund habitat improvement. Along with regular wildlife funds (4350), Range Betterment (8100) and Bankhead-Jones (8200) accounts are also available. Challenge Cost Share grants are another source of money. Most state wildlife agencies have funds dedicated for upland game bird habitat improvement work. In Montana and New Mexico, Sikes Act stamp programs generate additional wildlife habitat improvement revenues.

TABLE 5

General Types of Improvement Actions Recommended for Key Upland Game Bird Areas

IMPROVEMENT ACTIONS	NUMBER OF KEY AREAS	PERCENT KEY AREAS
Water Development	182	23
Vegetation Enhancement	393	50
Riparian	(222)	(28)
Upland	(171)	(22)
Grazing Management	135	17
Timber Management	12	2
People Management	10	1
Wild Horse/Burro Management	6	1
Transplant	32	4
Cooperative Agreement	15	2

AL BAMMANN

Volunteers assisting BLM with a water development in Arizona which will benefit Gambel's Quail.

Implementation Strategies

1. *Implement 4,794 projects to improve upland game bird habitat within 398 Key Areas by the year 2000 (Figure 8).* Prepare and maintain on an annual basis a priority list of habitat improvement projects in each District Office. Coordinate the development of this list with state wildlife agencies.

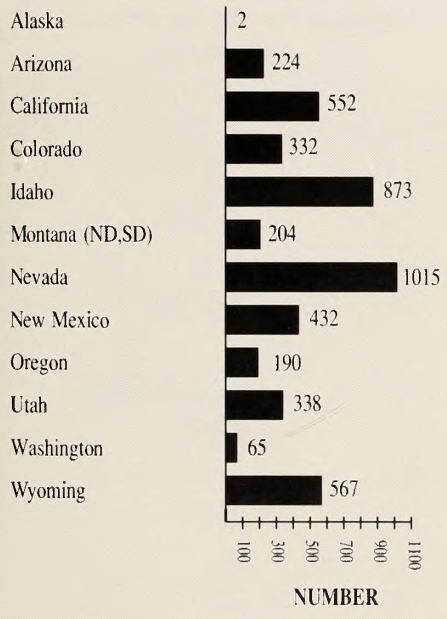
2. *Establish partnerships to fund and/or to provide in-kind volunteer assistance to complete the identified habitat improvement projects.* Seek Challenge Cost Share funds to accomplish these projects.

3. *Increase the use of Range Betterment (8100) and Bankhead-Jones (8200) funds to complete habitat improvement projects.*

4. *Showcase the New Mexico Sikes Act program to other states by 1995 to encourage them to implement similar programs.* Coordinate the use of Sikes Act Stamp funds to ensure that upland game birds are benefitting from revenues.

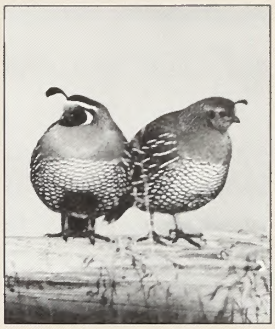
FIGURE 8

Identified Habitat Improvement Projects to Benefit Upland Game Birds (4,794 projects)



SPECIES SNAPSHOT

California Quail



RON SPOMER

Where They Live
The original range of this quail was California and the Baja Peninsula, as well as small portions of southern Oregon and western Nevada. Transplant programs established them in most of Oregon and Washington, northern Nevada, western Idaho and parts of Arizona and Utah. Currently, they're found on more than three million acres of BLM land.

How They're Doing
Much of their native habitat in California has been destroyed or severely reduced due to intensive agriculture and urbanization. Remaining strongholds are rangelands and the edges of irrigated agricultural areas. Some of these areas provide prime habitat; others are far below their potential. With a little management, the amount of habitat on BLM land could almost be doubled.

What They Need
Lack of water or dense shrub cover limits California quail populations in many areas; food is seldom a problem. On western rangelands, shrubby riparian areas provide cover needed for security as well as a water supply. Adjacent rangelands are used for foraging.

It's a Fact
California quail have their own "big brother" program. Unmated males take great interest in young birds and may assist in rearing a brood or even become excellent foster parents.

MANAGEMENT ACTION FIVE: HABITAT MONITORING AND MAINTENANCE

Management Situation

Monitoring and maintenance are the least glamorous aspects of wildlife habitat management, yet both are extremely important. Monitoring provides the basis for knowing if management actions are achieving the desired result. And, without maintenance of facilities, the investment and benefits of habitat improvement efforts will be lost.

Implementation Strategies

1. *Annually monitor 1,146 sites in 313 Key Areas to ensure that management actions are meeting habitat goals and objectives. (Figure 9).* Integrate upland game bird habitat monitoring requirements with other BLM monitoring programs, whenever possible.

2. *Investigate new monitoring techniques to improve efficiency.*

3. *Annually maintain 2,800 existing habitat improvement projects and facilities in acceptable condition in 292 Key Areas (Figure 10).* Seek cooperative funding and assistance to complete necessary maintenance.

4. *Develop agreements with state wildlife agencies and other partners to assist with monitoring and maintenance activities on Key Upland Game Bird Areas.*

5. *Prepare and maintain an Upland Game Bird Key Area data base to track and evaluate implementation of this plan.* Identify specific workloads that require tracking and incorporate them into the *Fish and Wildlife 2000* tracking system by 1994.

FIGURE 9

Identified Annual Monitoring Needs for Upland Game Birds (1,146 sites)

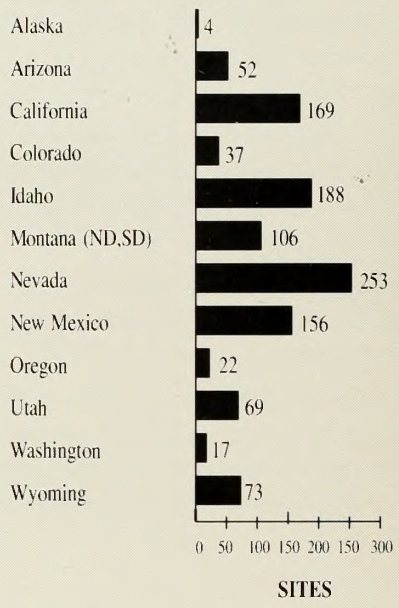
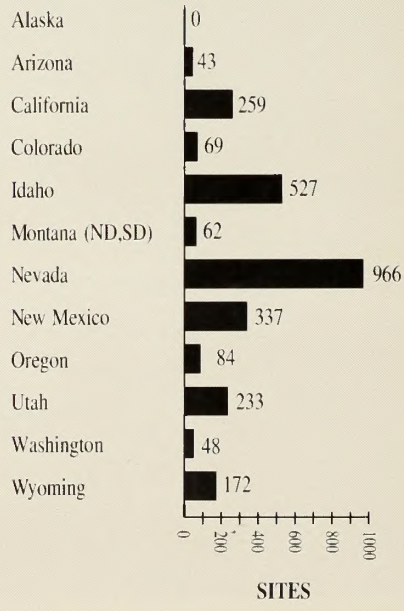


FIGURE 10

Identified Annual Habitat Maintenance Needs for Upland Game Birds (2,800 projects)



SPECIES SNAPSHOT

RON SPOMER

Gambel's Quail

Where They Live
Gambel's quail, unlike their look-alike cousin the California quail, are a true desert species. They are native to the southwest United States and northwestern Mexico. BLM manages over 12 million acres of Gambel's quail habitat, primarily in southeastern California, Arizona, New Mexico and southern Nevada.

How They're Doing
Available habitat for Gambel's quail has changed little over time but populations fluctuate widely depending on precipitation.

What They Need
Preferred habitat is the dense desert shrubs located in draws and along drainages. More than any other upland game bird, Gambel's quail rely on rain. If there's not enough of it to bring out desert annuals, the birds will not reproduce. Expect a good breeding year whenever there's good winter moisture in the Southwest.

It's a Fact
If fleshy plants are available, Gambel's quail may live their entire lives without a drink of water.

MANAGEMENT ACTION SIX: COORDINATION AND PARTNERSHIPS

Management Situation

Improving upland game bird habitat on BLM lands isn't always easy. It requires coordination with other agencies, organizations and individuals. For example, a single improvement project could mean working with a state wildlife agency, the U.S. Fish and Wildlife Service, a private landowner or permittee and a conservation group. In addition, actions must be coordinated among resource activities within BLM to avoid conflicts and achieve mutual goals.

Partnerships are a good way of helping to improve habitat. They can supply both muscle and money to get field work done. In recent years, BLM has entered into many national and local-level partnerships. Still, there are many more opportunities to expand and make better use of partnerships, especially at the field level.

Implementation Strategies

1. *By 1994, establish a national upland game bird program manager position to promote, coordinate and track implementation of the Upland Game Bird Strategy Plan.*

2. *Ensure that upland game bird strategies, plans or programs identified in national and local-level documents are in concert with plans developed by state wildlife agencies.* Discuss plan accomplishments and identify new opportunities at annual coordination meetings with state wildlife agencies.

3. *Develop cost-share agreements with other federal agencies, state agencies, interest groups, businesses and individuals to help accomplish on-the-ground actions in Key Upland Game Bird Areas.*

4. *Coordinate implementation of Habitat Management Plans and other improvement actions in Key Upland Game Bird Areas with other BLM programs and initiatives.* Habitat improvement for upland game birds supports the habitat needs for many other wildlife species. Combining efforts for multiple species benefits will be a more efficient use of limited funds.

SPECIES SNAPSHOT

Chukar

WILLIAM H. MULLINS

Where They Live
Chukar are native to Eurasia but have been transplanted widely. They are now well-established in Utah, Nevada and Idaho, and eastern Washington, Oregon and California, and northern Arizona. With the exception of a few areas in Wyoming, there has been only limited success from transplants east of the Rocky Mountains. Chukar are a major species on BLM land, occupying more than 12 million acres.

How They're Doing
Most chukar populations are fairly stable on public lands and, in some areas, are gradually increasing. Even though they occur widely on BLM land, they occupy only slightly more than half the estimated available habitat.

What They Need
Chukar prefer steep, rocky terrain. Cheatgrass, an exotic annual, is an important food source for chukar but does not satisfy all their needs. Low shrubs and native bunchgrasses enhance nesting and brood cover. Many areas that could be good habitat are unoccupied because water is scarce.

It's a Fact
Chukars tolerate cold well, having few problems in temperatures down to -30° F. They do not fare as well in snow, especially if it covers their food supply for more than a week.

MANAGEMENT ACTION SEVEN: OUTREACH AND TRAINING

Management Situation

Many people are unfamiliar with BLM and the land it administers. Others are unaware of upland game bird resources on BLM land and the potential for improvement. Management programs, such as this strategy plan, need public understanding and support if they are to be successful. Information and education is important to the implementation of this plan.

Within BLM, training about upland game bird management has been sporadic. A better system for training and transferring information to BLM biologists and managers needs to be developed.

Implementation Strategies

1. *Increase attendance and participation by BLM biologists and managers in national, regional and local conventions or meetings of Pheasants Forever, Quail Unlimited, National Wild Turkey Federation, Western States Sage and Columbian Sharp-tailed Grouse Workshop, Prairie Grouse Technical Council, and similar organizations.* Meet, at least on an annual basis, with established partners to report progress and discuss planned actions and cooperative efforts. Provide partners with lists of key BLM personnel involved with upland game bird management.

2. *Co-sponsor regional and national symposia on upland game bird management in the West.*

3. *Publish an annual outreach report that highlights BLM's upland game bird management program.* The report will summarize progress of the upland game bird strategic plan, the upland game bird component of state *Fish and Wildlife 2000* plans, and progress made in cooperative partnerships.

4. *Promote public understanding of upland game birds and their relationships to habitat.* Sponsor field trips and public presentations, publish articles in popular literature, produce videotapes and displays, and prepare pamphlets about upland game birds.

5. *Develop an upland game bird habitat training package by fiscal year 1996.* The package will address inventory and monitoring techniques, habitat analysis, developing habitat objectives, techniques for mitigation of habitat loss or population reductions, and data analysis and storage. The program coordinator will develop the training package in cooperation with the Phoenix Training Center and will update and improve this package on a biennial basis.

6. *Prepare species management handbooks (including guidelines and stipulations) for important species.* Complete at least one handbook every two years. Special status species will receive first priority for completion.

PROGRAM IMPLEMENTATION AND COST SUMMARY

PROGRAM IMPLEMENTATION

Many upland game bird populations on public land are far below their potential. But the interest in these birds is growing — inside and outside of BLM. This plan, in fact, originated because of the concern over the declining status of many upland game bird species.

The program for upland game birds is ambitious, but BLM is capable of carrying it out given the needed resources. Implementation will require additional funding. It also takes people to make it all work — employees to write plans, coordinate within BLM and with outside groups, develop the environmental assessments, and implement on-the-ground management and improvements.

Another key to the program's success will be involvement of agencies and groups outside of BLM. Working with these groups to improve habitat will boost BLM's ability many times over.

Many other BLM programs can help, too. The other *Fish and Wildlife 2000* strategy plans and other initiatives like *Range of Our Vision, Forests: Our Growing Legacy* and *Recreation 2000* all have goals that are compatible with improving upland game bird habitat. Many of the pieces are in place for BLM to improve habitat in a coordinated way.

SPECIES SNAPSHOT

WILLIAM H. MULLINS

Blue Grouse

Where They Live
Blue grouse are associated with true fir and Douglas-fir forests of western Canada and the western United States. BLM manages more than six million acres of blue grouse habitat, mostly in Oregon, Idaho, Colorado and Utah.

How They're Doing
Generally, blue grouse are faring well. Their distribution has changed little over time. Nevertheless, there is a good opportunity on BLM lands to increase and improve habitat through better grazing management and improved forest management.

What They Need
Like most other upland game birds, insects and other invertebrates are extremely important to the well-being of chicks. These foods are abundant around springs and seeps supporting meadow and riparian vegetation. Conifers, especially Douglas-fir, become important in the late fall and winter for roosting, escape, thermal cover and as a source of food.

It's a Fact
Most people think blue grouse occur only in forests. Not so. For nesting and brood-rearing, they'll travel miles into the grass or sagebrush country to find just the right spot. Still, they're heavily dependent on the forest; up to 98 percent of the birds' winter diet is fir needles.

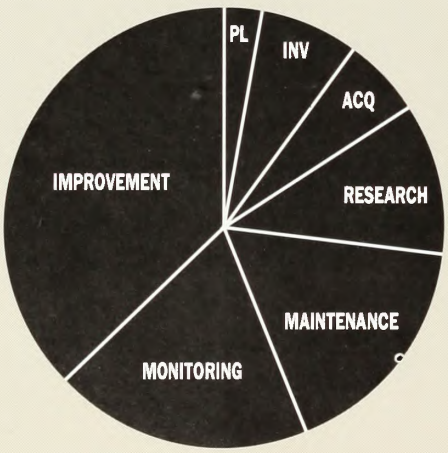
COST SUMMARY

An estimated $47.5 million is needed to implement this program from now until the year 2000 (Figure 11). This total includes $17.6 million for improvement projects, $3.1 million for inventory, $1.5 million for planning, $8.3 million for maintenance, $8.9 million for monitoring, $3.0 million for acquisition and $5.1 million for research. Funding needs by species are shown in Table 6 and by BLM state administrative unit in Appendix III.

FIGURE 11

The Planned Distribution of Upland Game Bird Funds (1992-2000)

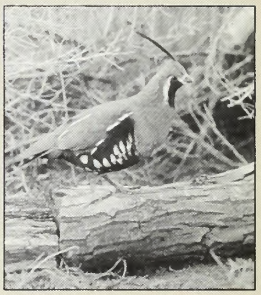
Planning	$1.5 Mil.	3%
Acquisition	$3.0 Mil.	6%
Inventory	$3.1 Mil.	7%
Research	$5.1 Mil.	11%
Maintenance	$8.3 Mil.	17%
Monitoring	$8.9 Mil.	19%
Improvement Projects	$17.6 Mil.	37%



TOTAL = $47.5 MILLION

SPECIES SNAPSHOT

Mountain Quail



RON SPOMER

Where They Live

Mountain quail reside primarily in western Washington, western Oregon, and the mountainous areas of California and Baja California. Their distribution is much more limited in southeastern Washington, northeastern Oregon, western Idaho and western Nevada. Most habitat for mountain quail on BLM land is in California, Oregon, Idaho and Nevada.

How They're Doing

Populations in western California, Oregon and Washington are healthy. However, east of the Sierra Nevada and the Cascade mountains, populations have been declining over the last 40 years. Populations in eastern Oregon are low and they are nearly gone from Nevada and Idaho.

What They Need

Although the general distribution of mountain quail overlaps that of California quail, and both species are usually found close to water, their food and cover requirements differ. Mountain quail are closely associated with taller and denser shrub habitat than California quail. Mountain quail feed largely on fruit and seeds of perennial plants. California quail mostly feed on annuals. Mountain quail are unique among the North American quail because they regularly migrate up to 40 miles between summer and winter areas. Riparian areas provide essential wintering habitat and a critical link with summer areas.

It's a Fact

Mountain quail are the largest native quail in North America. They are about a third heavier than California quail.

TABLE 6

Summary of Funding Needs (1992-2000) for Upland Game Birds by Species and Work Category ($000s)

SPECIES	INV	PLAN	PROJ	MAINT	MON	RES	ACQ	TOTAL
Ptarmigan	35	6	50	0	200	80	0	371
Blue Grouse	147	82	481	253	403	425	170	1961
Ruffed Grouse	21	6	79	160	80	190	0	536
Wild Turkey	141	86	822	196	872	610	92	2819
Sharp-tailed Grouse	192	32	936	195	833	620	985	3793
Sage Grouse	1243	501	7450	3596	3134	1904	611	18439
Prairie-chicken	34	10	233	30	50	60	0	417
California Quail	23	71	878	430	350	202	105	2059
Gambel's Quail	380	69	1920	712	267	30	45	3423
Montezuma Quail	10	6	79	40	470	30	6	641
Scaled Quail	200	145	559	717	881	80	10	2592
Mountain Quail	174	119	740	405	430	260	355	2483
Bobwhite	60	18	80	30	30	50	0	268
Chukar	259	121	1150	493	414	251	20	2708
Gray Partridge	7	0	40	0	10	80	9	146
Ring-necked Pheasant	49	43	1495	570	201	73	532	2963
Mourning Dove	11	132	438	250	131	25	93	1080
White-winged Dove	71	40	198	160	112	60	0	641
Band-tailed Pigeon	13	0	0	32	32	75	0	152
TOTALS	**3070**	**1487**	**17628**	**8269**	**8900**	**5105**	**3033**	**47.5 Mil.**

INV = Inventory **PLAN** = Plans **PROJ** = Projects **MAINT** = Maintenance **MON** = Monitoring **RES** = Research **ACQ** = Acquisition

APPENDICES

APPENDIX I

KEY UPLAND GAME BIRD AREAS

Abbreviations Used in Appendix I

ABBREVIATION	SPECIES NAME
PT	Ptarmigan
BG	Blue Grouse
RG	Ruffed Grouse
SPG	Spruce Grouse
T	Wild Turkey
STG	Sharp-tailed Grouse
SG	Sage Grouse
PC	Prairie-chicken
CQ	California Quail
GQ	Gambel's Quail
MQ	Montezuma Quail
SQ	Scaled Quail
MTQ	Mountain Quail
B	Northern Bobwhite
C	Chukar
GP	Gray Partridge
P	Ring-necked Pheasant
MD	Mourning Dove
WD	White-winged Dove
BP	Band-tailed Pigeon

ALASKA

Key Area Name	Acres (000s)	Primary Species
Gulkana	1400.0	STG
White Mtn	1100.0	PT,STG,RG,SPG

ARIZONA

Key Area Name	Acres (000s)	Primary Species
Kanab Crk/Paria Cyn	45.0	C
Mt Trumbull/Logan	16.0	T
Phoenix	864.0	GQ,MD,WD
Big Sandy River	1.0	WD,MD,GQ
Hualapai Mtns	7.0	BP,GQ
Kingman	800.0	GQ
Riparian Areas	12.5	WD,MD,GQ,T
Fred J. Weiler	62.7	WD,MD,GQ
Empire-Cienega	45.0	MQ,SQ,GQ,MD
Aravaipa-Muleshoe	40.0	T,MQ
Gila Mtns	30.0	T,MQ
Black Hills	10.0	MQ,GQ
Dos Cabezas	45.0	T,MQ,BP,GQ
Guadalupe/Baker	12.0	MQ,T,GQ
Peloncillo Mtns	60.0	MQ,BP,GQ,SQ
San Pedro Ripar	50.0	WD,MD,T,GQ
San Simon	40.0	SQ,GQ,MD
Laguna-Martinez	1.9	WD,MD

CALIFORNIA

Key Area Name	Acres (000s)	Primary Species
Adobe Valley	41.0	SG,MD
Bodie Hills	100.0	SG,MTQ,C,MD
Crater Mtn	19.3	C,CQ,MD
Long Valley	40.5	SG
Mono Basin	130.0	SG,C,MD
Owens Lake	16.0	CQ,C,MD,WD
South Benton	189.0	SG,CQ,MD,C
South Inyo Mtns	72.5	MTQ,CQ,C
W Owens Valley	35.0	C,CQ,MD
W Slinkard Valley	3.2	BG
Caliente Mtn	50.0	CQ,MTQ
Chimney/Walker	100.0	MTQ,CQ,MD
Temblors	50.0	CQ,C,MD
Hunter Valley	10.0	CQ,MTQ
North Fork-Halls	30.0	CQ,MTQ
Red Hills	4.5	CQ,MTQ
Coalinga Mineral	5.0	MTQ,T,MD,CQ
Laguna Mtn	1.0	MTQ,T,MD,CQ
Panoche/Grizwold/ Tumey	20.0	CQ,C,MD
Afton Cyn	42.0	GQ,C,MD,WD
Amargosa Cyn	8.0	MD,C,GQ,WD
Juniper Flats	6.0	CQ,GQ,C,MTQ
Salt Ck Hills	2.0	MD,GQ,WD
Algodones Dunes	83.0	MD,GQ,WD
East Mesa	101.0	GQ,MD,WD
McCain Valley	75.0	CQ,MD,MTQ
Milpitas Wash	85.0	MD,WD,GQ
Picacho Peak	10.0	MD,WD,GQ
San Sebastian Marsh	6.0	MD,WD,GQ
Smuggler's Cave	4.0	CQ,MD,MTQ,WD
West Mesa	17.0	GQ,MD
Yuma Desert	63.0	GQ,MD,WD
Clark Range	19.0	GQ,C
Granite Mtns	56.0	GQ,C,MTQ
Kingston Range	64.0	GQ,C,MD,WD
New York Mtns	67.0	GQ,C,MTQ
Old Woman Mtns	450.0	GQ,C
Paiute Creek	5.0	GQ,C
Chuckwalla Mtns	260.0	GQ
Dos Palmas	20.0	MD,GQ,WD
Granite/Palen Mtns	67.0	GQ
Hauser Mtn/ McAlmond Cyn	30.0	CQ,MTQ
Orocopia Mtns	57.0	GQ
Poppett Flat	6.0	MTQ,CQ
Steele Peak	11.0	CQ
Whitewater Cyn	40.0	MTQ,GQ,CQ
Beauty Mtn	29.0	CQ,MTQ
E Sierra Canyons	88.0	C,CQ,GQ,MTQ
Jawbone/Butterbredt	162.0	C,CQ,GQ,MTQ
El Paso/Rand Mtns	88.0	C
W Panamint Mtns Cyns	121.0	C,CQ,GQ,MTQ
Likely Tables	50.0	C,CQ,SG
MacDonald Mtn	30.0	SG,CQ,C
Cal-Neva	230.0	SG,C,CQ
Willow Creek	90.0	SG,C,CQ
Duck Flat	100.0	C,CQ
Hays Canyon Rng	40.0	C,CQ
High Rock	100.0	SG,C,CQ
Cache Crk	8.5	T,CQ,MD,MTQ
Cow Mtn	50.0	CQ,MTQ,MD,T
Indian Valley	40.0	MTQ,CQ,MD,T
Redding	200.0	MTQ,CQ
Sacramento River	3.7	CQ,T
Blueridge/Case Mtn	16.3	BG,BP,MTQ,CQ

COLORADO

Key Area Name	Acres (000s)	Primary Species
Arkansas Canyon	249.0	T
E Plain W/L Tracts	16.7	P,SQ,BQ
Phantom Canyon	112.0	T
Blanca Wildlife Area	7.0	P,MD
Middle Park HMP	60.0	SG
North Park HMP	120.0	SG
Douglas Mountain	150.0	RG
Great Divide	50.0	STG
Irish Canyon	4.0	C
Little Snake Riv	10.0	C

Blue Mountain	40.0	SG,BG
Crooked Wash	22.0	SG
E Douglas/Doug P	24.0	RG
Highway 40	64.0	SG
Piceance Basin	100.0	SG,BG
Thornburgh/Nimem	8.0	STG
Castle Peak	107.0	SG
Hardscrabble Mtn	55.7	SG
King Mtn	88.1	SG
Book-Roan Cliff	14.0	C
Collbran	81.0	SG
Colorado River Cyn	24.3	T,GQ
Dolores River	11.0	C
Glade Park	77.6	T,STG,BG
Grand Valley	147.0	C,GQ,P
Kannah Crk	62.0	C,GQ,P
Roan Creek	259.0	T,C,STG
Durango	100.0	SG,PT,RG,MD
Gunnison Basin	300.0	SG
Mcehno Canyon	30.0	C
Menefee/Weber Mtn	40.0	T
Yellowjacket Cyn	50.0	GQ
Dolores River	640.0	C
Dominquez	50.0	STG
Fruitland Mesa	50.0	SG
Gunnison Gorge	50.0	T,C
North Delta	126.0	C
Uncompahgre Plat	100.0	T

IDAHO

Key Area Name	Acres (000s)	Primary Species
Riparian	30.0	MTQ,STG,RG,T
C J Strike W/L Tracts	15.0	P,CQ,GP,MD
Jacks Creek	140.0	MTQ,SG
Meadows	2.0	SG
Owyhee Uplands	20.0	C
Riddle Ranches	13.5	SG,GP,C
Trueblood	0.5	P,CQ,MD
Goodrich	12.0	T,BG,MD
Snake River Breaks	40.0	MTQ,C,RG,T
Weiser River Breaks	10.0	STG,CQ,C
Black Cyn W/L Tracts	5.0	P,GP
Crane Creek	100.0	STG,SG,GP,CQ
Hixon Sharptail	16.0	STG,SG,GP,CQ
Saylor Crk W/L Tracts	15.0	P,GP,CQ
Snake River W/L Tracts	40.0	P,CQ,GP,C
Three Creek	60.0	SG,STG
Owyhee Foothills	150.0	SG,C,CQ,P
Jump Creek	20.0	MTQ,CQ,C
Squaw Creek	10.0	MTQ,C,CQ
Owyhee River Cyn	150.0	SG,C,CQ
Big Onion	7.0	STG,SG,BG,RG
Curlew	139.0	STG,SG,MD
Deep Crk W/L Tracts	0.1	P
Hansel Mtn	28.0	STG,SG,C,MD
Pleasantview	59.0	STG,SG,GP,BG
Black Pine	1.2	STG,SG
Samaria	25.0	STG,BG,RG,C
Goose Crk	67.0	SG,CQ,GP,C
Jim Sage	77.0	SG,C,GP,MD
Minidoka	250.0	P,SG,MD
Shoshone Basin	189.0	SG,GP,C,STG
Snake River W/L Tracts	15.0	P,GP,MD
South Hills	100.0	SG,C,CQ
Craig Mountain	15.0	MTQ,C,GP,T
Joseph Plains	5.0	T,MTQ,BG,RG
Lower Clearwater	10.0	MTQ,T,C,GP
Lower Salmon River	40.0	MTQ,C,G
Rattlesnake Ridge	8.5	MTQ,T,C,GP
Little Salmon River	10.0	MTQ,C,RG,T
Aberdeen W/L Tracts	2.0	P
Big Desert	250.0	SG,MD,GP
Birch Crk Foothills	30.0	SG,C,GP
Howe Peak/8 Mile Cyn	34.0	C,GP
Trail Crk/Timber Dome	25.0	SG,GP,C
Dry Creek	8.0	STG,BG,RG
Edie/Middle Crk Bench	100.0	SG
Sands	20.0	STG
Table Butte Unit	30.0	SG
W/L Tracts	7.0	P,GP,C
Bannock Co W/L Tracts	21.0	STG,P,GP
Bear Lake Plateau	15.4	SG,GP
Challis Foothill	300.0	SG,C
Mackay	100.0	SG
Pahsimeroi	200.0	SG
Leadore/Birch Crk	150.0	SG
Lemhi Foothills	95.0	SG,C,GP,P
Foothills	300.0	C
Shoshone Foothills	100.0	BG,RG
Isolated Tracts	6.0	P,GP
King Hill	50.0	MTQ,STG
Bennett Hills	500.0	SG
Laidlaw Park	91.5	SG
Picabo Hills	100.0	SG,C
W/L Tracts	3.9	P,GP,MD

MONTANA

Key Area Name	Acres (000s)	Primary Species
Sand Dunes	1.5	SG
Sheep Crk Basin	9.0	SG
Forest	94.5	BG,RG,SPG
Riparian	3.8	RG,P
Sharptail	1.5	STG
Hunsaker	2.0	STG,P,GP
Sleeping Giant	25.0	BG,RG,T
Upper Big Hole	4.0	BG,RG,SPG
Sweetgrass Hills	10.0	STG,P,GP
Little Belt Mtns	0.5	BG,RG
Marias River	10.0	STG,P,GP
Rocky Mtn Front	30.0	BG,RG
Missouri Breaks	160.0	SG,STG
Havre Riparian	10.0	STG,P,GP

Wood	2.0	P,GP,STG,T
Judith	600.0	STG,SG
Little Rockies	28.0	BG
Sagebrush/Grassland	350.0	GP
Phillips	350.0	MD
Phillips Riparian	13.0	P
North Phillips	137.0	STG
South Phillips	236.0	SG
Larb Hills	2.0	T
Valley Riparian	10.0	STG
Sagebrush	300.0	SG
Big Dry	1250.0	SG,STG
Bridger	50.0	C
Powder River	5.0	STG,P

NEVADA

Key Area Name	Acres (000s)	Primary Species
Antelope Valley	173.0	SG
Barton/Willow/Vigas	17.9	SG
Battle Mountain	120.0	SG,C,CQ,MD
Cortez Mtns	10.0	SG,C
Cowboy's Rest	20.0	SG
Crescent Valley	25.0	SG,C,MD,CQ
Desatoya Mtns	77.0	SG
Diamond Mtns	115.0	SG,C,MD,BG
Fish Creek Mtns	230.0	SG,C,CQ,MD
Garden Valley	50.0	SG,MD
Grass Valley	130.0	SG,C,GP,MD
Grass Valley South	18.9	SG
Hall-Callaghan Mtn	21.1	BG,SG,MTQ
Hall-Iowa	30.0	SG
Kobeh Valley	117.0	SG
Monitor Valley	113.0	SG
Mt Callaghan-Willow Crk	170.0	SG,C,BG,MD
New Pass	9.0	SG,MD
Ravenswood	72.0	SG
Reese River Valley	241.0	SG
Roberts Mtn	90.0	SG,BG,MD
Shoshone Range	170.0	SG,C,CQ,MD
Simpson Park	260.0	SG,C,BG,MD
Smith Creek Valley	288.0	SG
Smoky Valley	220.0	SG
Sulfur Springs Range	90.0	SG,MD
Tonopah Waters	190.0	C,GQ,CQ,MD
Monitor Valley	180.0	SG,MD,C
Carson Waters	166.0	SG,C,MTQ
Cherry Valley	746.0	SG
Desert Mtns	95.0	C,MD
Sand Spring/Fairview Peak	619.0	C,MD
Spanish Flat	206.0	SG
Mina	592.0	C,MD
Pine Nuts	309.0	SG,MTQ,C,CQ
Singatze	20.0	C,MD
North Fork	500.0	SG,CQ
Cherry Creek	360.0	SG
Goose Creek	190.0	SG
Marys River	290.0	SG
Metropolis	370.0	SG
Bruneau River	30.0	SG
Izzenhood	350.0	C,SG,CQ,MTQ
Snowstorm Mtns	138.0	SG,CG
Elko Sage Grouse	0.5	SG
Oneil/Salmon Falls	680.0	STG,SG,RG
Pilot/Crittendon	320.0	SG
Ruby/Wood Hills	4100.0	SG
Spruce/Goshutes	1700.0	SG
Buck/Bald/Maverick/ Diamond	850.0	SG,BG,C,GP
Antelope Range	460.0	SG,BG
Golden Gate Range	31.0	C
Horsethief	425.0	SG,BG
Middle Creek	460.0	SG
Muleshoe	245.0	SG
N Pahroc Range	8.0	C
Sharp Creek	460.0	SG
Meadow Valley Wash	35.0	GQ
Virgin River	6.4	GQ,P,MD
Springs	207.0	GQ
Bilk Crk Range	600.0	SG,C,CQ,MD
Jackson Mtns	350.0	SG,C,CQ,MD
Montana-Double H	800.0	SG,C,CQ,MD
Owyhee-Snowstorm	690.0	SG,C,MD,MTQ
Pine Forest	925.0	C,SG,BG,MTQ
Santa Rosa's	100.0	C,CQ,MD,MTQ
Black Rock Range	700.0	SG,C,CQ,MTQ
Bluewing	650.0	C,CQ,MD,MTQ
East Range	500.0	SG,C,CQ,MTQ
Fencemaker	46.0	C,MD,MTQ,CQ
Fox Mtn	754.0	SG,C,CQ,MTQ
Fox Range	100.0	C,SG,MD,MTQ
Humboldt Range	400.0	SG,C,CQ,MTQ
Kelly Creek	20.0	C,MD,CQ,GP
Rye Patch	100.0	C,MD,CQ,GP
Sonoma Range	147.0	SG,C,CQ,MTQ
Tobin Range	400.0	SG,C,CQ,MTQ

NEW MEXICO

Key Area Name	Acres (000s)	Primary Species
Rosa/Laguna Seca	10.0	T,GQ,SQ
Ignacio Chavez Grant	33.0	T
Espiritu Santo Grant	47.0	SQ
Upper Rio Puerco	156.0	SQ,T
Cebolla Unit	2.0	T
Ojo Caliente	27.0	SQ
Sabinoso	6.0	SQ,T
San Antonio/Pot Mtn	12.0	T,SG
Sebastian Martin	60.0	GQ,SQ,T
Florida Mtn	40.0	SQ,GQ,MD
Organ Mtn	67.0	SQ,GQ,MD
East Guadalupe Escarp	2200.0	SQ,MD,BQ,MQ
Pecos River East	3.0	PC,SQ,BQ
Mescalero Sands	561.0	PC

Mesa Del Oro	144.0	SQ,MD
Big Hatchet	184.0	SQ,GQ
Cedar Mtns	186.0	SQ,GQ
Robledo Mtn	150.0	SQ,GQ
West Potrillo	150.0	SQ,GQ
Otero Mesa	900.0	SQ,GQ,MD
Caballo Mtn	100.0	SQ,GQ,MD
McGregor Range	475.0	SQ,GQ,MD,MQ
Nogal	134.4	SQ,GQ,MD
Bosquecito	140.8	SQ,GQ,MD
San Augustine	128.0	SQ,MD
Jornado North	167.6	SQ,GQ,MD
Fence Lake	32.8	SQ,MD
Magdalena	15.8	SQ,MD
Chupadera	170.2	SQ,MD
Pelona Mtns	78.3	T,MD
Horse Mtn	7.7	T,MD
Ladron Mtn	62.4	T,SQ,MD
Aqua Fria	10.7	T,MD
San Lorenzo Canyon	4.8	T,MD
Walnut Canyon	1.7	GQ,MD,SQ
Rio Grande Riparian	0.5	GQ,MD
Fort Stanton	26.3	T,MQ
Overflow Wetlands	6.3	P

NORTH DAKOTA

Key Area Name	Acres (000s)	Primary Species
Kid Creek	2.0	STG,SG,GP,MD
Big Gumbo	22.0	SG

OREGON

Key Area Name	Acres (000s)	Primary Species
Pueblo Mtns	291.0	SG,C
Steens Mtn	400.0	SG,C
Trout Crk Mtns	90.0	SG,C
Three Rivers	400.0	SG,C
East Warm Springs	100.0	C
Curry Co	20.0	T,MTQ
BTP	75.0	B-P
Alkali Lake	0.3	P,CQ
Gerber Block I	5.0	P,CQ,MD
Gerber Block II	150.0	SG,T
Klamath Foothills	1.6	MTQ,CQ,P,C
Pokegema	8.0	CQ,T,MD
Stukel Mtn	13.0	RG,MTQ,P
Agate Flat	10.0	MTQ,CQ,T
Little Applegate	9.3	MTQ,CQ
Lake Crk	5.0	T
Applegate/Rogue Divide	3.0	MTQ,T,RG
Bridge Crk	60.0	CQ,C,P,MD
Murderers Crk	102.0	SG,T,MTQ,RG
Brothers	555.0	SG
Roseburg	424.0	MTQ,BP,RG,T
Oregon Coast Range	200.0	BP
Baker	300.0	SG
Crystal Palace	1.0	P,CQ,MD,GP
Keating	0.4	BG,RG,STG,CQ
Birch Crk Meadows	6.0	P,MD,CQ
Jordan Waters	100.0	CQ,C,GP,MD
Fifteenmile	100.0	SG
L Harper Basin	150.0	SG
Skull Springs	200.0	SG

SOUTH DAKOTA

Key Area Name	Acres (000s)	Primary Species
Butte/Harding Co	200.0	SG,STG

UTAH

Key Area Name	Acres (000s)	Primary Species
Antelope Mtn	50.0	MD,T
Bald Hills	100.0	SG,BG
Buckskin	118.0	SG
Escalante Desert	200.0	MD,SG
Mineral Mtn	147.0	C,BG,T,MD
Parowan Front	100.0	MD,T,B-P
Pinyon Hills	1225.0	SG,C,MD
Red Mountain	50.0	GQ,MD
Sand Mountain	85.0	GQ,MD
Antimony	38.0	SG
Kaiparowits Plat	400.0	C
Garfield	75.0	SG,BG
Paunsaugunt	570.0	C,GQ,BG,MD
Cisco	100.0	C
Colorado River	20.0	T
Hatch Point	150.0	SG
Grassy Trail	90.0	C
Range Valley Mtn	25.0	SG,T
Hatch Point	26.9	SG
Montezuma Crk	7.7	T
Castle Valley	1.8	P,MD
S R Desert	500.0	C
Henry Mtn	250.0	GQ,T,C,BP
Parker Mtn	215.0	SG,GQ,C,T
House Range	100.0	SG
Fishlake Triangle	13.0	SG
Gypsum	3.0	BG
Manning Crk	7.0	C
Marysvale Canyon	1.0	T
Marysvale Front	5.0	T
Narrows	15.0	SG
Plateau	5.0	SG,BG
Sauls Meadow/Washburn	7.0	C
Cougar Mtn	50.0	C
Fairview	20.0	SG
Mountain Home	50.0	BG
Twin Peaks	50.0	SG

Wah Wah	100.0	C,BG
Rich Co	150.0	RG,SG
Box Elder Co	145.0	SG,C,GP
Cedar Mtns	105.0	C
Deep Crk Mtns	210.0	SG,C
Stansbury Mtns	325.4	BG,SG,C
Blue Mtn	68.7	SG,BG,STG,MD
Book Cliffs	50.0	BG,SG,MD,T
Deadman Bench	150.0	SG,MD,T
East Bench	100.0	SG,C,MD,T
Green River F/P	2.0	P,CQ,T,MD
Hill Creek	20.0	C,SG,MD
Pine Springs	10.0	T
Browns Park	186.0	SG,T,P,C
Diamond Mtn/Ashl	314.0	SG,STG,T,RG
Myton	294.0	P,SG,MD,BG
South Rush Valley	10.0	SG
Beef Basin	400.0	SG

WASHINGTON

Key Area Name	Acres (000s)	Primary Species
Huckleberry Mtn	12.0	BG,RG
Juniper Forest	14.0	CQ,P,GP
Upper Crab Creek	28.0	SG,STG,P,GP
Little Vulcan Mtn	1.2	BG
Jameson Lake	5.0	SG,C,CQ,MD
Moses Coulee	20.0	SG,CQ,C,MD
Palmer Mtn	6.0	STG,C,CQ,P
Rattlesnake Hills	20.0	CQ,C,P,GP
Saddle Mtn	23.0	SG,C,P,CQ
Similkameen	20.0	CQ,P,C,GP

WYOMING

Key Area Name	Acres (000s)	Primary Species
Middle Fork/ Powder River	57.0	BG,SG,GP
Powder River Brk	200.0	SG,GP,STG
South Bighorns	181.0	BG,RG,T,C
Arch Creek	1.0	STG
Battle Creek	5.0	T,SG,STG
Elk Mtn	3.0	T
Lightning Creek	10.0	SG
Little Missouri	7.0	T,SG,STG
Osage/Six Mile	7.0	SG
Summit Ridge	6.0	T,RG
Bates Creek Reservoir	25.0	SG
Baggs	100.0	STG,SG
Ferris-Seminoe	719.3	SG,BG
Red Desert	1137.6	SG
Shirley Mtn	460.7	BG,SG
Big Pasture	80.0	SG
Green Mtn	162.0	SG,BG,RG
Sheep Mtn/Beaver	10.5	SG,C
South Pass	184.0	SG,BG,RG
Prospect Mtn	390.0	SG
Salt Wells	187.0	SG
Overthrust	1500.0	SG
Big Piney/LaBarge	400.0	SG
Cora Butte/40-Rod Flat	20.0	SG
Mesa	50.0	SG
Ryegrass/Bench Corral	150.0	SG
Cody Wetlands	33.0	SG,P,C,GP
Rattlesnake Mtn	19.0	RG,BG
15-Mile	500.0	SG,C,GP
Absaroka Front	650.0	SG,BG,C,GP
Bighorn River	12.0	P,T
Blue Mesa	120.0	SG,C,GP,P
Dorsey/Elk Crk	100.0	SG,P,C,GP
Gillies/Hillberry	40.0	SG,C,GP
Little Sand Draw	115.0	C,GP,SG,P
Tatman Mtn	50.0	SG,C,GP,P
Various Tracts	10.0	P,C,GP,SG
West Side Irrigation	4.0	P,GP,C
Buffalo Creek	100.0	SG,GP
Cedar Mtn	50.0	C
Mud Creek	50.0	C,GP,SG
Nowater Creek	125.0	SG,GP
Trapper Creek	50.0	BG,SG

APPENDIX II

STRATEGY IMPLEMENTATION SCHEDULE AND RESPONSIBLE ORGANIZATIONAL UNITS

MANAGEMENT ACTION/STRATEGY	RESPONSIBILITY	TARGET DATE
ONE: Inventory/Research		
1. Inventory	RA	2000
2. Research	WO/DSC/SO/DO/RA	On-going
3. Information Transfer	WO/DSC	On-going
4. Cooperative Work	SO/DO	On-going
TWO: Habitat Protection		
1. RMPs	SO/DO/RA	On-going
2. Special Management Areas	RA	As needed
3. Acquisition	SO/DO/RA	2000
4. Acquisition Funding	WO/SO/DO	Annually
5. Environmental Documents	RA	Daily
THREE: Activity Plans		
1. HMPs	RA	2000
2. Other Activity Plans	RA	On-going
3. Special Status Species Plans	RA	As needed
4. Masked Bobwhite Assistance	SO/DO/RA	On-going
FOUR: Habitat Improvement		
1. Projects	RA	2000
2. Partnerships	WO/SO/DO/RA	On-going
3. Funding	WO	On-going
4. Sikes Act	WO/SO	1995
FIVE: Monitoring and Maintenance		
1. Monitoring	RA	Annually
2. New Monitoring Techniques	DO/RA	On-going
3. Maintenance	RA	Annually
4. Assistance Agreements	DO/RA	On-going
5. Key Area Data Tracking	WO/DSC/SO/DO/RA	1994
SIX: Coordination and Partnerships		
1. Upland Game Bird Program Manager	WO	1994
2. Coordination with State Wildlife Agencies	SO/DO	Annually
3. Cost-Share Agreements	DO/RA	Annually
4. Coordination with Other BLM Programs and Initiatives	DO/RA	On-going
SEVEN: Outreach and Training		
1. Involvement with Upland Game Bird Interests	WO/SO/DO/RA	On-going
2. Co-sponsor Symposia	WO/SO	As needed
3. Reporting Progress	WO	Annually
4. Information and Education	DO/RA	On-going
5. Training Package	WO/PTC	1996
6. Species Management Handbooks	WO/PTC	One every two years

Abbreviations Used: **WO** = Washington Office, Fish and Wildlife Division **SO** = State Office **DO** = District Office
RA = Resource Area **PTC** = Phoenix Training Center **DSC** = Denver Service Center

APPENDIX III

SUMMARY OF FUNDING NEEDS (1992-2000) BY BLM STATE ADMINISTRATIVE UNIT AND WORK CATEGORY ($000s)

STATE	INV	PLAN	PROJ	MAINT	MON	RES	ACQ	TOTAL
Alaska	45	6	50	0	200	50	0	351
Arizona	86	55	942	463	1134	180	6	2866
California	223	336	3419	1175	1175	119	859	7306
Colorado	236	86	461	254	345	561	42	1985
Idaho	436	214	2717	1497	1134	680	298	6976
Montana (ND,SD)	136	37	1079	132	418	280	274	2356
Nevada	884	339	3682	2286	1442	660	71	9364
New Mexico	290	185	984	862	1025	420	12	3778
Oregon (WA)	223	29	835	428	510	1180	1191	4396
Utah	223	176	1201	673	657	350	30	3310
Wyoming	288	24	2258	499	860	625	250	4804
TOTALS	**3070**	**1487**	**17628**	**8269**	**8900**	**5105**	**3033**	**47.5 Mil.**
(PERCENT)	(7)	(3)	(37)	(17)	(19)	(11)	(6)	(100)

INV = Inventory **PLAN** = Plans **PROJ** = Projects **MAINT** = Maintenance **MON** = Monitoring **RES** = Research **ACQ** = Acquisition

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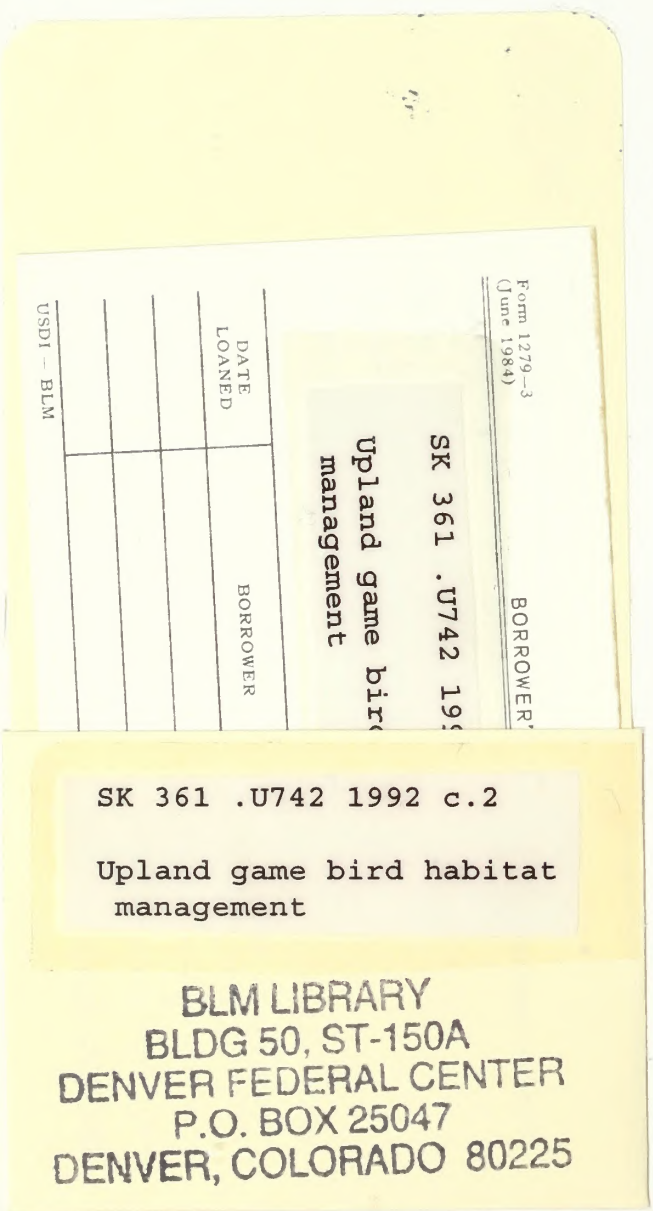

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NATIONAL TECHNICAL INFORMATION SERVICE (NTIS) REFERENCE

Organization: USDI Bureau of Land Management
Report Number: BLM-ID-PT-92-007-4351
Authors: Alan Sands and Donald Smurthwaite
Document Descriptors: Upland Game Bird Habitats
Document Identifiers: Public Lands, Western United States, Biodiversity
Availability Statement: Release Unlimited
Security Class: Unclassified

BLM-ID-PT-92-007-4351